



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2009-0201; Directorate Identifier 2008-NE-47-AD; Amendment 39-16972; AD 2010-11-09R1]**

**RIN 2120-AA64**

**Airworthiness Directives; Thielert Aircraft Engines GmbH (TAE) Reciprocating Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are revising an existing airworthiness directive (AD) for TAE models TAE 125-01 and TAE 125-02-99 reciprocating engines installed on, but not limited to, Diamond Aircraft Industries Model DA 42 airplanes. That AD currently requires initial and repetitive replacements of proportional pressure reducing valves (PPRVs) (also known as propeller control valves). This new AD relaxes the repetitive replacement interval from a 300-hour interval to a 600-hour interval for PPRVs, P/N 05-7212-E002801, on TAE 125-02-99 engine. This AD was prompted by TAE increasing the life of the PPRV, part number (P/N) 05-7212-E002801, on TAE 125-02-99 engines from 300 to 600 hours. We are issuing this AD to prevent engine in-flight shutdown, possibly resulting in reduced control of the aircraft.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of July 13, 2010 (75 FR 32253, June 8, 2010).

**ADDRESSES:** For service information identified in this AD, contact Thielert Aircraft Engines GmbH, Platanenstrasse 14 D-09350, Lichtenstein, Germany; phone: +49-37204-696-0; fax: +49-37204-696-2912; e-mail: [info@centurion-engines.com](mailto:info@centurion-engines.com). You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7143; fax: 781-238-7199; e-mail: [alan.strom@faa.gov](mailto:alan.strom@faa.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to revise AD 2010-11-09, Amendment 39-16314 (75 FR 32253, June 8, 2010). That AD applies to the specified products. The NPRM published in the Federal Register on

November 22, 2011 (76 FR 72128). That NPRM proposed to retain all of the requirements of AD 2010-11-09, except the repetitive replacement interval in paragraph (e)(2). This AD relaxes the repetitive 300-hour replacement interval to a 600-hour interval.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (76 FR 72128, November 22, 2011).

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting the AD as proposed.

### **Costs of Compliance**

We estimate that this AD affects about 300 TAE 125-01 and TAE 125-02-99 reciprocating engines installed in Diamond Aircraft Industries Model DA 42 airplanes of U.S. registry. We also estimate that it will take 0.25 work-hour per engine to replace a PPRV and install a vibration isolator to the gearbox assembly. The average labor rate is \$85 per work-hour. Required parts cost about \$275 per product. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$88,875.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds

necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2010-11-09, Amendment 39-16314 (75 FR 32253, June 8, 2010), and adding the following new AD:

2010-11-09R1 **Thielert Aircraft Engines GmbH**: Amendment 39-16972; Docket No. FAA-2009-0201; Directorate Identifier 2008-NE-47-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD revises AD 2010-11-09, Amendment 39-16314 (75 FR 32253, June 8, 2010).

#### **(c) Applicability**

This AD applies to Thielert Aircraft Engines GmbH (TAE) models TAE 125-01 and TAE 125-02-99 reciprocating engines designated with part number (P/N) 05-7200-K000301 or 02-7200-14017R1. The engines are installed on, but not limited to, Diamond Aircraft Industries Model DA 42 airplanes.

#### **(d) Unsafe Condition**

This AD was prompted by engine in-flight shutdown incidents reported on Diamond Aircraft Industries DA 42 airplanes equipped with TAE 125 engines. The investigations showed that it was mainly the result of failure of the proportional pressure reducing valve (PPRV) (also known as the propeller control valve) due to high vibrations. Since the release of European Aviation Safety Agency (EASA) AD 2008-0145, the engine gearbox has been identified as the primary source of vibrations for the PPRV, and it has also been determined that failure of the electrical connection to the PPRV could have contributed to some power loss events or in-flight shutdowns. We are issuing this

AD to prevent engine in-flight shutdown, possibly resulting in reduced control of the aircraft.

**(e) Actions and Compliance**

Unless already done, do the following actions.

**(f) TAE 125-02-99 Reciprocating Engines**

**(1) Initial PPRV Replacement**

For TAE 125-02-99 reciprocating engines with engine, P/N 05-7200-K000301, within 55 flight hours after the effective date of this AD:

(i) Replace the existing PPRV with PPRV, P/N 05-7212-E002801. Use paragraphs A. through B. of TAE Service Bulletin (SB) No. TM TAE 125-1007 P1, Revision 3, dated October 17, 2011, or SB No. TM TAE 125-1007 P1, Revision 2, dated April 29, 2009, to do the replacement.

(ii) Install a vibration isolator, P/N 05-7212-K022302, to the gearbox assembly. Use paragraphs 1 through 20 of TAE SB No. TM TAE 125-1009 P1, Revision 3, dated October 14, 2009, to do the installation.

**(2) Repetitive PPRV Replacements**

Thereafter, within every 600 flight hours, replace the PPRV, P/N 05-7212-E002801, with the same P/N PPRV.

**(g) TAE 125-01 Reciprocating Engines**

**(1) Initial PPRV Replacement**

For TAE 125-01 reciprocating engines with engine, P/N 02-7200-14017R1, within 55 flight hours after the effective date of this AD:

(i) Replace the existing PPRV with a PPRV, P/N NM-0000-0124501 or P/N 05-7212-K021401. Use paragraph 1 of TAE SB No. TM TAE 125-0018, Revision 1, dated November 12, 2008, to do the replacement.

(ii) Inspect the electrical connectors of the PPRV and replace the connectors if damaged, and install a vibration isolator, P/N 05-7212-K023801, to the gearbox assembly. Use paragraphs 1 through 27 of TAE SB No. TM TAE 125-0020, Revision 1, dated November 25, 2009, to do the inspection and installation.

**(2) Repetitive PPRV Replacements**

Thereafter, within every 300 flight hours, replace the PPRV with a PPRV, P/N NM-0000-0124501 or P/N 05-7212-K021401.

**(h) FAA Differences**

(1) We have found it necessary to not reference the second paragraph of the unsafe condition from the MCAI EASA AD 2009-0224. That sentence stated that the problem has only manifested itself on those TAE engines installed on Diamond Aircraft Industries DA 42 aircraft. The affected engines which require a PPRV could be used on other make and model airplanes in the future.

(2) We also did not reference the February 28, 2010 compliance date, which is in EASA AD 2009-0193R1, or the January 31, 2010 compliance date which is in EASA AD 2009-0224.

**(i) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(j) Related Information**

(1) Refer to EASA AD 2009-0224, dated October 20, 2009 (TAE 125-02-99), and EASA AD 2009-0193R1, dated December 1, 2009 (TAE 125-01), for related information.

(2) For more information about this AD, contact Alan Strom, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New

England Executive Park, Burlington, MA 01803; phone: 781-238-7143; fax: 781-238-7199; e-mail: [alan.strom@faa.gov](mailto:alan.strom@faa.gov), for more information about this AD.

(3) For service information identified in this AD, contact Thielert Aircraft Engines GmbH, Platanenstrasse 14 D-09350, Lichtenstein, Germany, phone: +49-37204-696-0; fax: +49-37204-696-2912; e-mail: [info@centurion-engines.com](mailto:info@centurion-engines.com)

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) under 5 U.S.C. 552(a) and 1 CFR part 51

(2) You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on [INSERT DATE 35 DAYS AFTER PUBLICATION].

(i) Thielert Aircraft Engines (TAE) GmbH, TAE Service Bulletin (SB) No. TM TAE 125-1007 P1, Revision 3, October 17, 2011.

(4) The following service information was approved for IBR on July 13, 2010 (75 FR 32253, June 8, 2010).

(i) Thielert Aircraft Engines (TAE) GmbH, TAE SB No. TM TAE 125-1007 P1, Revision 2, April 29, 2009.

(ii) Thielert Aircraft Engines (TAE) GmbH, TAE SB No. TM TAE 125-1009 P1, Revision 3, dated October 14, 2009.

(iii) Thielert Aircraft Engines (TAE) GmbH, TAE SB No. TM TAE 125-0020, including Annexes A and B, Revision 1, dated November 25, 2009.

(iv) Thielert Aircraft Engines (TAE) GmbH, TAE SB No. TM TAE 125-0018, Revision 1, dated November 12, 2008.



(5) For service information identified in this AD, contact Thielert Aircraft Engines GmbH, Platanenstrasse 14 D-09350, Lichtenstein, Germany, phone: +49-37204-696-0; fax: +49-37204-696-2912; e-mail: [info@centurion-engines.com](mailto:info@centurion-engines.com).

(6) You may review copies of the referenced service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(7) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal-register/cfr/ibr\\_locations.html](http://www.archives.gov/federal-register/cfr/ibr_locations.html).

Issued in Burlington, Massachusetts, on February 24, 2012.

Peter A. White,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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